# Energy: What's It All About

**Grades 2-3**

## Overview

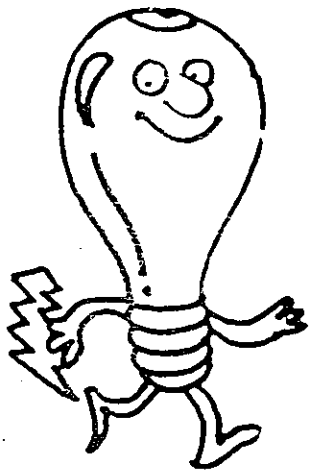
The students will observe and discuss different sources of energy. The students will make 3 things that fly using their energy and the wind's energy.

## Objectives

- To help students understand that energy is the capacity to move, heat or light things.
- To help students understand that there are many different types of energy sources.
- To help students understand that an energy source releases energy in the form of heat, light, sound, electricity or motion.

## Materials

*For the presenter:*



***Potential Sources of Energy***:

- fan
- a plant
- food
- coal
- oil
- mixer
- lamp
- pinwheel
- pitcher of water or a water faucet in the classroom
- wood
- flashlight / batteries
- picture or drawing of the sun

*For each student:*

- 1 regular straw
- 2 large straws (must be larger that the other straw)
- 1 copy of the Funcopter
- 3 paper clips
- 2 strips of paper 1" x 8 1/2"
- scotch tape
- scissors
- crayons or markers

## Getting Ready

### Activity 1

Set all the sources of energy on a table in front of the class. Write ***Sources of Energy*** on the chalkboard. Activity 2: Put straws, tape, paper, paper clips, and copies of the Funcopter on a table that has easy access by the students. Make a sample of the Loop Plane, Fun-copter and Rocket Launcher.

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## Procedures

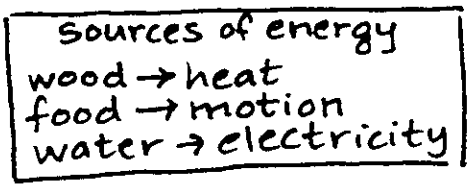
### Activity 1: Energy Sources

1. Tell the students you brought some sources of energy to share with them. Ask: "What is Energy? Why do we need Energy?"

2. Write ***Sources of Energy*** on the chalkboard. Ask: "What does the word ***source*** mean?" Make sure all the students have an understanding of it. "What is a source of energy? Can you think of other examples?"

3. Share the energy sources that you brought: ***wood, water, oil, sun, food, electricity, batteries, etc.*** Write the names of these on the board as you share each one. Discuss with the students that these sources of energy are used by people to produce something that they need. Hold up the sources of energy again, one at a time, and ask: "What do people want when they use this source of energy? For example: wood - people burn wood to get ***heat*** to stay warm." (write heat on the board by wood). Plug in the mixer and the lamp.

   Ask: "What do people want when they plug these into the electric outlet" They want the ***motions*** of the beaters and ***light*** from the lamp. Keep in mind that ***energy sources release energy in the forms of heat, light, sound, electricity, & motion.***" When the students respond with one of these, write it on the board next to its source of energy. Follow the same procedure for all the sources that you brought. Review with the students how energy is released in the form of heat, light, sound, electricity or motion. Refer to their ideas that you put on the board.



**Activity 2: Using the Wind's Energy**

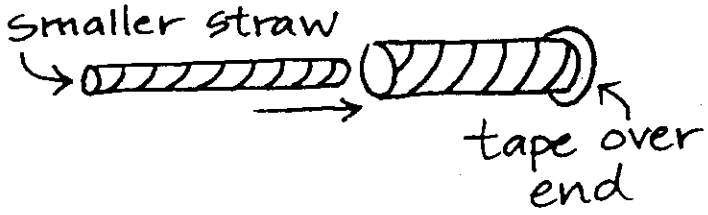
1. Tell the student that they are going to make 3 things that use their energy plus the wind's energy to fly.

2. Show the students the samples of the three projects. Demonstrate how to make each one and how they fly. Tell the students that after they finish making their projects, the class will go outside and experiment flying them.

3. Hand out the materials for the first project, and the students can pick up the materials for the other 2 projects when they are ready for them.

***Rocket Launcher***

- Cut 1 big straw in half. Tape one end of both halves closed.
- Take the thinner straw and put it inside one of the halves.
- Blow on the end of the thin straw and the watch the big one fly.

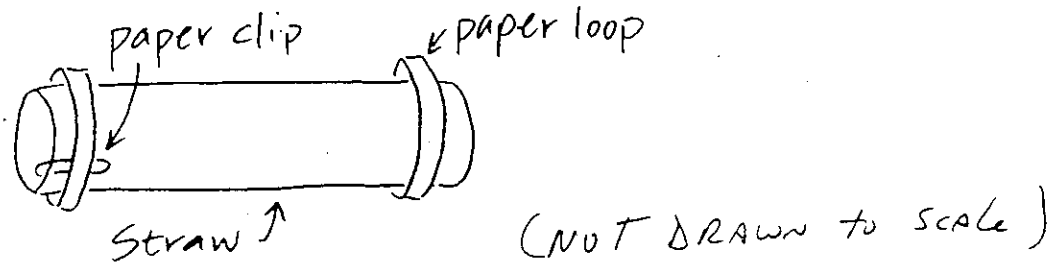



***Funcopter** (see attached sheet for sample)*

- Decorate your Funcopter shape.
- Cut out the funcopter shape. Cut only on solid lines.
- Fold on dotted lines.
- Fold down the wings so one is on each side of the Funcopter.
- Fold the tail part of the Funcopter on the dotted lines.
- Hang 2 paper clips on the bottom for weight.
- Hold you Funcopter, tail down, as high as you can and let it go.

*Loop Plane*

- Attach a paper clip to one end of a large straw.
- Decorate 2 strips of 1" x 8 1/2" paper.
- Tape the strips into loops.
- Tape one loop to each end of the straw.
- The paper clip end of your straw needs to point forward.
- Your Loop Plane is ready to fly.

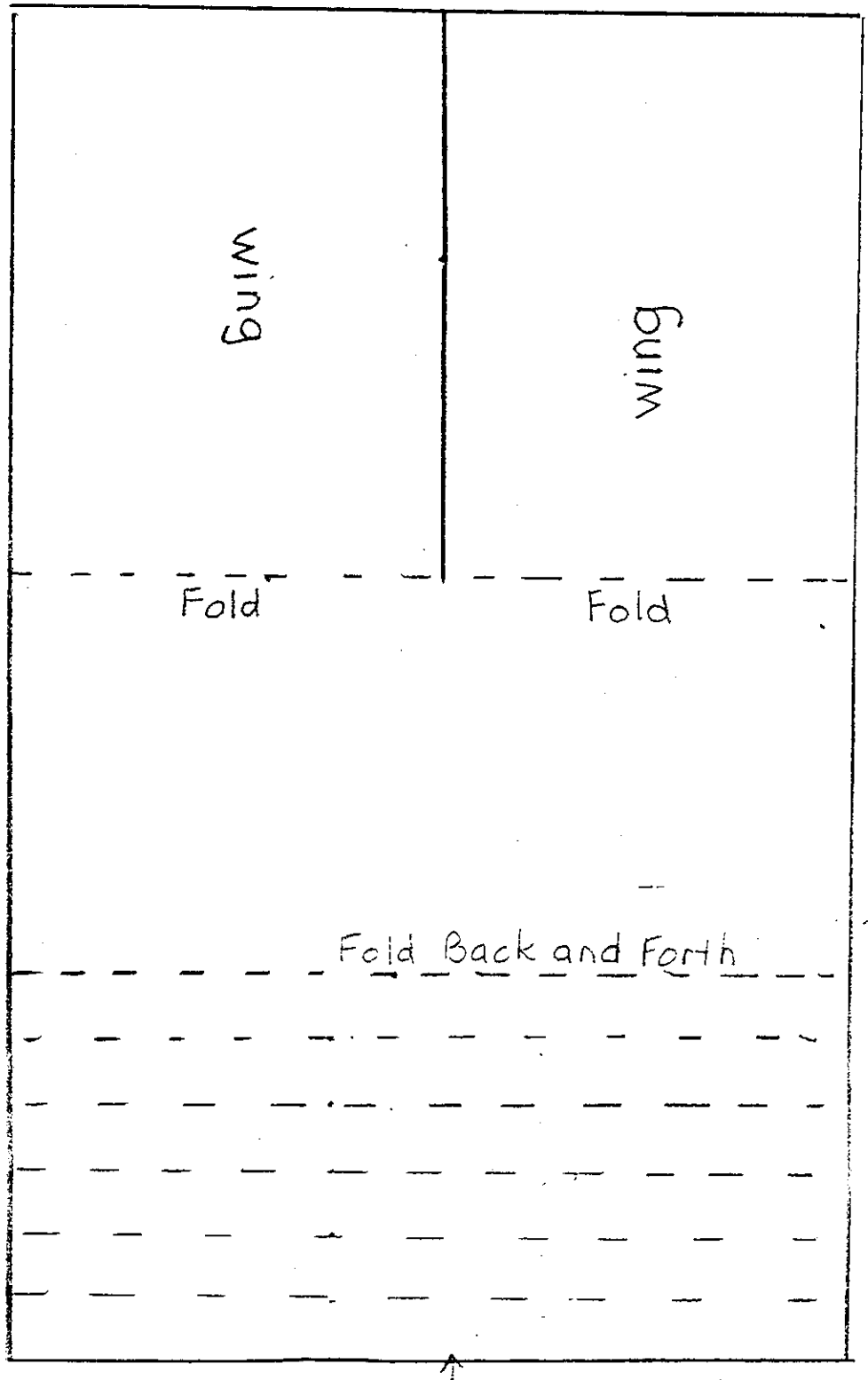



After everyone has completed their projects and cleaned up their space, take the students outside to test fly their creations.

**Closure**

After the projects are put away, Ask: "What sources of energy did you use to fly your projects? What happened to your projects when energy was released? ***(motion - when the planes, etc. flew)***

# Fun-copter


wing
wing
Fold
Fold
Fold Back and Forth
Hang 2 paper clips here